

ABSTRACT

This invention relates to the production of lactic acid and/or lactate from pentose-containing substrate, particularly from xylose-containing substrate

Currently, lactic acid is commercially produced from

5. glucose, starch, liquefied starch or sucrose. At present, these substrates are the most important contributor to the manufacturing cost price of lactic acid. Lignocellulosic biomass offers a cost attractive alternative as a substrate for the biological production of lactic acid because it is
- 10 readily available, has no competing food value, and is less expensive than either starch or sucrose.

We have found that moderately thermophilic *Bacillus* species are able to ferment pentoses, more specifically xylose to enantiomerically pure lactic acid and/or lactate. Said

- 15 conversion of pentoses leads to virtually only C₃ compounds, i.e. said conversion runs via a homofermentive pathway, which C₃ compounds can be recovered as lactic acid and/or lactate.